

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A hollow fiber membrane type fluid treatment device, comprising:

at least a body portion of tubular housing containing a hollow fiber membrane bundle;

a housing head portion which is connected with one end of the housing body portion and has a resin layer where the hollow fiber membrane bundle is fixed by using a resin composition, and a connection port which serves as a treatment liquid inlet;

a housing head portion which is connected with the other end of the housing body portion and has a resin layer where the hollow fiber membrane bundle is fixed by using a resin composition, and a connection port which serves as a treatment liquid outlet;

header caps attached to the housing head portions and having respective treatment target liquid connection ports; and

an inner surface of a body portion of the tubular housing at the side of a treatment liquid inlet comprises a body straight portion and an end tapered portion which increases in diameter toward the end face of the housing body portion, and the hollow fiber membranes are arranged so that a distance between the hollow fiber membranes is gradually increased toward the end face on the treatment liquid inlet side along a taper of a tapered portion of the inner surface of the housing body portion, and

opening ends of the hollow fiber membrane bundle being fixed to an inside of the housing by the resin layers, and the opening ends of the hollow fiber membrane bundle facing the respective treatment target liquid connection ports such that wherein a liquid to be treated flows within the hollow fiber membranes, and

the treatment liquid inlet and treatment liquid outlet being provided at a circumference of the hollow fiber membrane bundle such that a treatment liquid flows outside of the hollow fiber membranes.

2. -12. (Canceled)

13. (Previously Presented) The hollow fiber membrane type fluid treatment device according to claim 1, wherein the tapered portion comprises a first tapered portion located on the body portion side, and a second tapered portion located on the treatment liquid inlet side, and the angle of the first taper angle is smaller than the angle of the second taper angle.

14. (Previously Presented) The hollow fiber membrane type fluid treatment device according to claim 1, wherein an angle formed by a centerline of the inner surface of the housing body portion and an inner surface of the end tapered portion is greater than 0° and smaller than an angle defined by $\tan^{-1}\{1/2 \cdot (d1-d4)/L4\}$ (where, d1 is the diameter of the hollow fiber membrane bundle at an end face of the resin layer, d4 is an inner diameter of the straight portion or minimum diameter portion of the body portion, and L4 is the length (one side) of the end tapered portion which increases in diameter toward the end face of the housing body portion).

15. (Previously Presented) The hollow fiber membrane type fluid treatment device according to claim 14, wherein an angle formed by the centerline of the inner surface of the housing body portion and the inner surface of the end tapered portion is greater than 0.58° and smaller than the angle defined by $\tan^{-1}\{1/2 \cdot (d1-d4)/L4\}$ (where, d1 is the diameter of the hollow fiber membrane bundle at an end face of the resin layer, d4 is an inner diameter of the straight portion or minimum diameter portion of the body portion, and L4 is the length (one side) of the end tapered portion which increases in diameter toward the end face of the housing body portion).

16. (Previously Presented) The hollow fiber membrane type fluid treatment device according to claim 1, wherein a ratio of the length of the body straight portion to the total length of the end tapered portion is 0.7 to 20, and a ratio of the inner diameter of the end tapered portion on the end face side to the inner diameter of the body straight portion is more than 1 and not more than 3.

17. (Previously Presented) The hollow fiber membrane type fluid treatment device according to claim 1, having a urea clearance and a vitamin B12 clearance of 191 to 200 ml/min and 135 to 170 ml/min, respectively.

18. (Previously Presented) The hollow fiber membrane type fluid treatment device according to claim 1, comprising baffle plates provided at positions corresponding to the treatment liquid inlet and the treatment liquid outlet of the tubular housing and interspatially from the inner

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circumference of the tubular housing over the entire inner circumference at a curvature almost along the inner circumference .

19. (Original) The hollow fiber membrane type fluid treatment device according to claim 18, wherein the baffle plate gradually increases in diameter toward the end face of the housing.